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(54) **Sensing apparatus and method.**

(57) Sensing apparatus based on the use of Raman spectroscopy for detecting the presence and location of a species of interest in a medium comprises a light transmissive optical fibre (4) with an elongate sensing length along at least a portion thereof, a light source means (1) for transmitting pulses of light along the fibre, and a detector (6) for detecting at the same end of the fibre as the light source Raman signals resulting from species (c) of interest at the interface of the sensing length and a medium in which it is located. The time difference between the transmission of an excitation pulse and detection of a Raman emission signal caused by that pulse is determined, and is used to determine the position of the species along the fibre.

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# EUROPEAN SEARCH REPORT

Application Number

DOCUMENTS CONSIDERED TO BE RELEVANT			EP 90305760.2
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
D, A	US - A - 4 781 458 (S.M. ANGEL) * Totality * --	1, 4, 6, 7	G 01 N 21/65
A	US - A - 4 674 878 (TUAN VO-DINH) * Totality * --	1, 2, 4	
A	US - A - 4 573 761 (R.D. MC LACHLAN) * Totality * --	1	
A	FR - A1 - 2 571 144 (CENTRE NATIONAL) * Abstract; page 7, lines 7-15; page 8, lines 24-34; page 11, lines 3-15; claims; fig. 1-4 * ----	1, 2, 3, 4, 7	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			G 01 N 21/00
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
VIENNA	07-02-1991	ERBER	
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document			